We claim:

43. (New) A method for continuous tracking the location of mobile units, comprising the steps of:

providing at least one mobile unit having a wireless transceiver and a unique address;

providing at least one stationary base unit having a phase array antenna with three or more antenna elements, where said stationary base unit periodically polls said at least one mobile unit to trigger transmission of at least one signal from said mobile unit to said stationary base unit;

receiving said signal, including an address from said mobile unit at said stationary base unit via said phase array antenna;

measuring the phase difference of said signal arriving at said three or more antenna elements of said phase array antenna;

performing calculations by expressing the phase difference at a plurality of points of location of said antenna elements of said stationary base unit relative to

at least one other point of location of another antenna element of the same stationary base unit; and

determining from said phase difference at said plurality of points of said antenna elements the coordinates of location of at least one mobile unit.

44. (New) The method according to claim 43, wherein the coordinates of location of said mobile unit are expressed as polar coordinates.

45. (New) The method according to claim 43, further comprising a step of transmitting said calculated coordinates of location of said mobile unit from said at least one stationary base unit to a main unit.

46. (New) The method according to claim 45, further comprising a step of adjusting said calculated coordinates of said mobile unit using an environmental data.

47. (New) The method according to claim 46, wherein said environmental data comprises a floor plan.

48. (New) The method according to claim 45, further comprising a step of adjusting said calculated coordinates of said mobile unit using a location

coordinates of said mobile calculated by a different stationary base unit.

49. (New) The method according to claim 45, wherein said transmission of said calculated coordinates is wireless.

50. (New) The method according to claim 45, wherein said main unit is connected to said at least one stationary base unit.

51. (New) The method according to claim 43, wherein the step of performing calculations by expressing the phase difference at a plurality of points of location of said antenna elements of said stationary base unit relative to at least one other point of location of another antenna element of the same stationary base unit and the step of determining from said phase differences the coordinates of location of at least one mobile unit are performed in a stationary base unit.

52. (New) The method according to claim 45, wherein the step of performing calculations by expressing the phase difference at a plurality of points of location of said antenna elements of said stationary base unit

relative to at least one other point of location of another antenna element of the same stationary base unit and the step of determining from said phase differences the coordinates of location of said mobile unit are performed in a main unit.

53. (New) The method according to claim 45, wherein each mobile unit has at least one sensor and a signal transmitted to said main unit includes an information signal from said sensor, and wherein the information signal is processed by said main unit.

54. (New) The method according to claim 43, further comprising a step of providing at least one wireless portable reference transceiver disposed at a fixed location and having a unique identifying address and calibrating the accuracy of the calculation of the coordinates of at least one mobile unit using the known location of said portable reference transceiver.

55. (New) The method according to claim 54, wherein the step of calibrating comprises

measuring the phase difference between the signal arriving at each of a plurality of antenna element from at least one portable reference transceiver;

performing calculations at said stationary base unit by expressing the phase difference at a plurality of points of location of said antenna elements of said stationary base unit relative to at least one other point of location of another antenna element of the same stationary base unit;

determining from said phase differences the coordinates of location of said portable reference transceiver; and

correcting future calculations of the coordinates of at least one mobile unit by the difference between the calculated coordinates of said portable reference transceiver and the actual location of said portable reference transceiver.

56. (New) The method according to claim 55, wherein said portable reference transceiver has at least one sensor.

57. (New) A method for continuous tracking the location of mobile units, comprising the steps of:

providing a plurality of mobile units each having a wireless transceiver and a unique address;

providing a plurality of stationary base units, each having a phase array antenna with at least one pair of antenna elements, wherein at least one stationary base unit of said plurality of stationary base units periodically polls at least one mobile unit of said plurality of mobile units to trigger a signal transmission from said mobile unit to at least one of said plurality of stationary base units,

receiving said signal including an address from at least one mobile unit at a plurality of stationary base units via a phase array antenna of each said stationary base unit;

measuring the phase difference of said signal from a mobile unit of said plurality of mobile units at each respective pair of antenna elements of a phase array antenna of a plurality of stationary base units;

performing calculations by expressing the phase difference at a point of location of a first antenna element of a first stationary base unit relative to a point of location of a second antenna element of the same stationary base unit and the phase difference of a point of location of a first antenna element of a second stationary base unit relative to a point of location of a second antenna element of the second stationary base unit, wherein said first and second stationary base units receive signals from the same mobile unit; and

determining from said calculations the coordinates of location of said mobile unit.

58. (New) The method according to claim 57, wherein the coordinates of location of said mobile unit are expressed as polar coordinates.

59. (New) The method according to claim 57, further comprising a step of transmitting said calculated coordinates of location of said mobile unit from a stationary base unit to a main unit.

60. (New) The method according to claim 59, further comprising a step of adjusting said calculated

coordinates of said mobile unit using an environmental data.

61. (New) The method according to claim 60, wherein said environmental data comprises a floor plan.

62. (New) The method according to claim 59, further comprising a step of adjusting said calculated coordinates of said mobile unit using a location coordinates of said mobile calculated by a different stationary base unit.

63. (New) The method according to claim 59, further comprising a step of adjusting said calculated coordinates of said mobile unit using a location coordinates of said mobile calculated by a main unit using data received from a different stationary base unit.

64. (New) The method according to claim 59, wherein said transmission of said calculated coordinates is wireless.

65. (New) The method according to claim 59, wherein said main unit is connected to said stationary base unit.

66. (New) The method according to claim 57, wherein the step of performing calculations by expressing the phase difference at a point of location of a first antenna element of a first stationary base unit relative to a point of location of a second antenna element of the same stationary base unit and the phase difference of a point of location of a first antenna element of a second stationary base unit relative to a point of location of a second antenna element of the second stationary base unit and the step of determining from said calculations the coordinates of location of at least one mobile unit are performed in a stationary base unit.

67. (New) The method according to claim 57, further comprising a main unit, wherein the step of performing calculations by expressing the phase difference at a point of location of a first antenna element of a first stationary base unit relative to a point of location of a second antenna element of the same stationary base unit and the phase difference of a point of location of a first antenna element of a second stationary base unit relative to a point of location of a second antenna element

of the second stationary base unit and the step of determining from said calculations the coordinates of location of at least one mobile unit are performed in a main unit.

68. (New) The method according to claim 59, wherein each mobile unit has at least one sensor and a signal transmitted to said main unit includes an information signal from at least one sensor, and wherein the information signal is processed by said main unit.

69. (New) The method according to claim 57, further comprising a step of providing at least one wireless portable reference transceiver disposed at a fixed location and having a unique identifying address and calibrating the accuracy of the calculation of the coordinates of at least one mobile unit using the known location of said portable reference transceiver.

70. (New) The method according to claim 69, wherein the step of calibrating comprises

measuring the phase difference between the signal arriving at the antenna element of said stationary base station from said portable reference transceiver;

expressing the phase difference at a point of location of a first antenna element of a first stationary base unit relative to a point of location of a second antenna element of the same stationary base unit and the phase difference of a point of location of a first antenna element of a second stationary base unit relative to a point of location of a second antenna element of the second stationary base unit, wherein said first and second stationary base units receive signals from the same portable reference transceiver;

determining from said calculations the coordinates of location of said portable reference transceiver; and

correcting future calculations of the coordinates of at least one mobile unit by the difference between the calculated coordinates of said portable reference transceiver and the actual location of said portable reference transceiver.

71. (New) The method according to claim 70, wherein said at least one portable reference transceiver has at least one sensor.

72. (New) A method for calibrating a system for continuous tracking the location of mobile units, comprising the steps of:

providing at least one stationary base unit with a phase array antenna having antenna elements for receiving signals from a plurality of mobile wireless transceiver units and at least one wireless portable reference transceiver disposed at a fixed location and having a unique identifying address;

receiving a signal including an address from said wireless portable reference transceiver at said stationary base unit via a phase array antenna;

measuring the phase difference of said signal arriving at a plurality of antenna elements of said phase array antenna;

performing calculations by expressing the phase difference at a plurality of points of location of said antenna elements of said stationary base unit relative to at least one other point of location of another antenna element of the same stationary base unit;

determining from said phase differences the coordinates of location of said portable reference transceiver; and

correcting future calculations of the coordinates of the mobile wireless transceiver units by the difference between the calculated coordinates of said portable reference transceiver and the actual location of said portable reference transceiver.

73. (New) The method according to claim 72, wherein at least one stationary base unit periodically polls at least one mobile unit to initiate a signal transmission from said mobile unit to said stationary base unit.

74. (New) The method according to claim 72, wherein the coordinates of location of said mobile unit are expressed as polar coordinates.

75. (New) The method according to claim 72, further comprising a step of transmitting said calculated coordinates of location of said wireless portable reference transceiver from said stationary base station to a main unit.

76. (New) The method according to claim 75, wherein said transmission of said calculated coordinates is wireless.

77. (New) The method according to claim 75, wherein said main unit is connected to said at least one stationary base unit.

78. The method according to claim 72, wherein the step of performing calculations by expressing the phase difference at a plurality of points of location of said antenna elements of said stationary base unit relative to at least one other point of location of another antenna element of the same stationary base unit and the step of determining from said phase differences the coordinates of location of said wireless portable reference transceiver are performed in a stationary base unit.

79. The method according to claim 75, wherein the step of performing calculations by expressing the phase difference at a plurality of points of location of said antenna elements of said stationary base unit relative to at least one other point of location of another antenna element of the same stationary base unit and the step of

determining from said phase differences the coordinates of location of said wireless reference transceiver are performed in a main unit.